

Precipitation.—The average was 1.17 above the normal; greatest monthly, 6.92, at Eden Center; least monthly, 1.67, at Lyons.

Wind.—Prevailing direction, northwest.—Prof. E. A. Fuytes, Dean of the College of Civil Engineering, Cornell University, director; R. M. Hardinge, Observer, Weather Bureau, assistant.

NORTH CAROLINA.

Temperature.—The mean was 1.9 above the normal; maximum, 95, at Rockingham, 9th; minimum, 21, at Bakersville, 24th; greatest monthly range, 69, at Bakersville; least monthly range, 34, at Southport.

Precipitation.—The average was 1.06 below the normal; greatest monthly, 7.08, at Highlands; least monthly, 0.88, at Littleton.

Wind.—Prevailing direction, southwest.—Dr. Herbert B. Battle, Raleigh, director; C. F. von Herrmann, Observer, Weather Bureau, assistant.

NORTH DAKOTA.

Temperature.—The mean was 5.7 below the normal; maximum, 77, at Medora, 23d; minimum, —8, at Milton, 14th; greatest monthly range, 78, at Milton; least monthly range, 41, at University.

Precipitation.—The average was 0.05 above the normal; greatest monthly, 3.98, at Wahpeton; least monthly, 0.10, at Bottineau.

Wind.—Prevailing direction, northwest.—W. H. Fallon, Observer, Weather Bureau, Bismarck, director.

OHIO WEATHER AND CROP SERVICE.

Temperature.—The mean was 0.6 above the normal; maximum, 93, at Portsmouth, 7th; minimum, 20, at Auburn, 16th; greatest monthly range, 67, at McLuney; least monthly range, 47, at Harbor and Campbellstown.

Precipitation.—The average was 3.29 above the normal; greatest monthly, 9.49, at Georgetown; least monthly, 3.08, at Cleveland.

Wind.—Prevailing direction, southwest.—L. N. Bonham, Columbus, director; C. M. Strong, Observer, Weather Bureau, assistant.

OKLAHOMA.

Temperature.—Maximum, 102, at Purcell, 5th, and at Mangum, 6th; minimum, 24, at Guthrie, 24th; greatest monthly range, 74, at Gate City; least monthly range, 58, at Lehigh.

Precipitation.—Greatest monthly, 6.48, at Eufaula; least monthly, 0.01, at Gate City.

Wind.—Prevailing direction, south.—J. I. Widmeyer, Observer, Weather Bureau, Oklahoma City, director.

PENNSYLVANIA.

Temperature.—The mean was 0.5 below the normal; maximum, 85, at Johnstown, 8th; minimum, 16, at Columbus, 16th; greatest monthly range, 58, at Hollidaysburg; least monthly range, 38, at Harrisburg.

Precipitation.—The average was 1.47 above the normal; greatest monthly, 6.91, at Clarion; least monthly, 2.95, at Reading.

Wind.—Prevailing direction, west.—Under direction of the Franklin Institute, Philadelphia; W. P. Tatham, director; H. L. Ball, Observer, Weather Bureau, assistant.

SOUTH DAKOTA.

Temperature.—The mean was 4.5 below the normal; maximum, 82, at Oelrichs, 6th; minimum, 4, at Bowdle, 14th; greatest monthly range, 78, at Frankfort; least monthly range, 46, at Bear Valley.

Precipitation.—The average was 0.92 above the normal; greatest monthly, 6.85, at Flandreau; least monthly, 0.35, at Piedmont.

Wind.—Prevailing direction, northwest.—S. W. Glenn, Local Forecast Official, Weather Bureau, Huron, director.

TENNESSEE WEATHER AND CROP SERVICE.

Temperature.—The mean was 2.0 above the normal; maximum, 92, at Harriman, 9th; minimum, 28, at Newport and Springdale, 24th; greatest monthly range, 62, at Harriman and Springdale; least monthly range, 46, at Bolivar (b), Rogersville, Florence Station, and Fayetteville.

Precipitation.—The average was 0.87 above the normal; greatest monthly, 8.78, at Fayetteville; least monthly, 2.71, at Johnson City.

Wind.—Prevailing direction, south.—J. B. Marbury, Local Forecast Official, Weather Bureau, Nashville, director.

TEXAS.

Temperature.—The mean was 4.5 above the normal; maximum, 108, at Twohig, 2d; minimum, 19, at Coldwater, 19th; greatest monthly range, 74, at Coldwater; least monthly range, 27, at Galveston.

Precipitation.—The average was 1.14 below the normal; greatest monthly, 6.47, at Sugar Land; least monthly, 0.00, at several stations.

Wind.—Prevailing direction, south.—D. D. Bryan, Galveston, director; I. M. Cline, Local Forecast Official, Weather Bureau, assistant.

UTAH.

Temperature.—The mean was 5.0 below the normal; maximum, 88, at Saint George, 22d; minimum, 1, at Scofield, 8th; greatest monthly range, 66, at Scofield; least monthly range, 42, at Lake Park.

Precipitation.—Greatest monthly, 3.09, at Provo; least monthly, 0.00, at Losee.

Wind.—Prevailing direction, northwest.—G. N. Salisbury, Observer, Weather Bureau, Salt Lake City, director.

VIRGINIA.

Temperature.—Maximum, 92, at Dale Enterprise, 8th; minimum, 20, at Avon, 6th; greatest monthly range, 67, at Avon and Dale Enterprise; least monthly range, 40, at Alexandria.

Precipitation.—Greatest monthly, 4.83, at Big Stone Gap; least monthly, 0.84, at Hampton.

Wind.—Prevailing direction, south.—Dr. E. A. Craighill, Lynchburg, director; J. N. Ryker, Observer, Weather Bureau, assistant.

WASHINGTON.

Temperature.—The mean was 4.7 below the normal; maximum, 74, at Ellensburg, 26th; minimum, 20, at Waterville, 11th; greatest monthly range, 51, at Ellensburg; least monthly range, 16, at Olga and Vashon.

Precipitation.—The average was 3.04 above the normal; greatest monthly, 13.82, at Neah Bay; least monthly, 1.30, at Fort Simcoe.

Wind.—Prevailing direction, southwest.—H. F. Alciatore, Observer, Weather Bureau, Olympia, director.

WEST VIRGINIA.

Temperature.—Maximum, 92, at Point Pleasant, 7th; minimum, 20, at Davis, 24th; greatest monthly range, 66, at Marlinton; least monthly range, 48, at Spencer.

Precipitation.—Greatest monthly, 8.98, at Pleasant Hill; least monthly, 2.91, at Marlinton.

Wind.—Prevailing direction, southwest.—W. W. Dent, Observer, Weather Bureau, Parkersburg, director.

WISCONSIN.

Temperature.—The mean was about 4.0 below the normal; maximum, 85, at Sharon, 7th; minimum, zero, at Butternut, 23d; greatest monthly range, 65, at Janesville; least monthly range, 37, at Bayfield.

Precipitation.—The average was 2.00 below the normal; greatest monthly, 6.67, at Raymond; least monthly, 1.76, at Bayfield.

Wind.—Prevailing direction, northeast.—W. L. Moore, Local Forecast Official, Weather Bureau, Milwaukee, director.

WYOMING.

Temperature.—Maximum, 76, at Wheatland, 3d, and at Lusk, 6th; minimum, 1, at Arland, 20th; greatest monthly range, 70, at Wheatland; least monthly range, 44, at Fort Yellowstone.

Precipitation.—Greatest monthly, 3.16, at Lander; least monthly, 0.32, at Laramie.

Wind.—Prevailing direction, west.—E. M. Ravenscraft, Observer, Weather Bureau, Cheyenne, director.

METEOROLOGICAL TABLES.

Meteorological record of voluntary and other co-operating observers, April, 1893.

Table with 4 columns: Stations, Temperature (Fahrenheit) (Max, Min, Mean), and Precip'n. Includes data for Alabama, Alabama-Cont'd, and other locations.

Meteorological record of voluntary observers, &c.—Continued.

Table with 4 columns: Stations, Temperature (Fahrenheit) (Max, Min, Mean), and Precip'n. Includes data for Alabama-Cont'd, Newberg, Newton, and other locations.

Meteorological record of voluntary observers, &c.—Continued.

Table with columns: Stations, Temperature (Fahrenheit) Max, Min, Mean, Precip'n. Includes entries for Alabama, Arizona, Arkansas, California, and Colorado.

Meteorological record of voluntary observers, &c.—Continued.

Table with columns: Stations, Temperature (Fahrenheit) Max, Min, Mean, Precip'n. Includes entries for California, Colorado, and other regional locations.

Meteorological record of voluntary observers, &c.—Continued.

Table with columns for Stations, Temperature (Fahrenheit) (Max, Min, Mean), and Precip'n. Includes sections for Colorado, Florida, Illinois, Iowa, Kansas, and Missouri.

Meteorological record of voluntary observers, &c.—Continued.

Table with columns for Stations, Temperature (Fahrenheit) (Max, Min, Mean), and Precip'n. Includes sections for Iowa, Kansas, Missouri, Nebraska, Oklahoma, and Texas.

Meteorological record of voluntary observers, &c.—Continued.

Table with columns for Stations, Temperature (Fahrenheit) (Max, Min, Mean), and Precip'n. Includes sections for Kansas-Cont'd., Louisiana-Cont'd., and Massachusetts-Cont'd.

Meteorological record of voluntary observers, &c.—Continued.

Table with columns for Stations, Temperature (Fahrenheit) (Max, Min, Mean), and Precip'n. Includes sections for Massachusetts-Cont'd., Minnesota-Cont'd., and Missouri.

Meteorological record of voluntary observers, &c.—Continued.

Table with columns for Stations, Temperature (Fahrenheit), and Precip'n. Includes entries for Missouri, Nebraska, and Nevada.

Meteorological record of voluntary observers, &c.—Continued.

Table with columns for Stations, Temperature (Fahrenheit), and Precip'n. Includes entries for New Hampshire, New Jersey, and New York.

Meteorological record of voluntary observers, &c.—Continued.

Table with columns for Stations, Temperature (Fahrenheit) (Max, Min, Mean), and Precip'n. Includes sections for North Carolina, Ohio, and Pennsylvania.

Meteorological record of voluntary observers, &c.—Continued.

Table with columns for Stations, Temperature (Fahrenheit) (Max, Min, Mean), and Precip'n. Includes sections for Pennsylvania, South Dakota, and Texas.

Meteorological record of voluntary observers, &c.—Continued.

Table with columns for Stations, Temperature (Fahrenheit) (Max, Min, Mean), and Precip. n. Includes entries for Texas, Virginia, and other regions.

Meteorological record of voluntary observers, &c.—Continued.

Table with columns for Stations, Temperature (Fahrenheit) (Max, Min, Mean), and Precip. n. Includes entries for Wisconsin, Oregon, and other regions.

Reports received too late to be used in general discussion of weather for April, 1893.

Table listing weather reports received too late for general discussion, organized by state (Alabama, California, Iowa, Kansas, Michigan, Missouri, Montana, Nebraska, Ohio, Oregon, Texas).

Received too late for publication in March, 1893.

Table listing weather reports received too late for publication in March, organized by state (Alabama, Arizona, Colorado, Illinois, Indiana, Mississippi, Missouri, Montana, Nebraska, North Carolina, Ohio, Oregon, Texas, Wisconsin).

* Extremes of temperature from observed readings of dry thermometer. † Weather Bureau instruments.

A numeral following the name of a station indicates the hours of observation from which the mean temperature was obtained, thus:

- ¹ Mean of 7 a. m. + 2 p. m. + 9 p. m. + 9 p. m. ÷ 4.
- ² Mean of 8 a. m. + 8 p. m. ÷ 2.
- ³ Mean of 7 a. m. + 7 p. m. ÷ 2.
- ⁴ Mean of 6 a. m. + 6 p. m. ÷ 2.
- ⁵ Mean of 7 a. m. + 2 p. m. ÷ 2.

⁶ Mean from readings at various hours reduced to true daily mean by special tables.

⁷ Mean from hourly readings of thermograph.

⁸ Mean of 7 a. m. + 2 p. m. + 9 p. m. ÷ 3.

The absence of a numeral indicates that the mean temperature has been obtained from daily readings of the maximum and minimum thermometers.

An *italic* letter following the name of a station, as "Livingston *a*," "Livingston *b*," indicates that two or more observers, as the case may be, are reporting from the same station. A small Roman letter following the name of a station, or in figure columns, indicates the number of days missing from the record; for instance, "2" denotes 14 days missing.

No note is made of breaks in the continuity of temperature records when the same do not exceed two days. All known breaks, of whatever duration, in the precipitation record receive appropriate notice.

Corrections: Georgia, Hawkinsville, January, 1893, make precipitation 3.47 instead of 1.50; Nevada, Pioche, March, 1893, make precipitation 4.19 instead of 3.34.

NOTE.—The following changes have been made in names of stations: Idaho, Henrys Lake, changed to Lake.

Data from Canadian stations for the month of April, 1893.

Station.	Pressure.			Temperature.		Precipitation.		Prevailing direction of wind.
	Mean not reduced.	Mean reduced.	Departure from normal.	Mean.	Departure from normal.	Total.	Departure from normal.	
Saint John's, N. F.	<i>Inches.</i> 29.78	<i>Inches.</i> 29.93	<i>Inches.</i> + .09	31.7	— 4.5	<i>Inches.</i> 8.08	<i>Inches.</i>	ne.
Halifax, N. S.	29.88	30.01	+ .09	35.0	— 1.5	4.21	+ 0.90	n.
Grand Manan, N. B.	29.97	30.02	.....	35.8	.....	2.67	+ 0.73	n.
Yarmouth, N. S.	29.94	30.02	+ .11	35.5	— 2.5	3.50	+ 0.56	n.
Saint Andrews, N. B.	29.94	29.99	.....	35.2	.....	2.62	+ 0.68	n.w.
Charlottetown, P. E. I. ..	29.93	29.97	.....	33.0	.....	1.87	— 1.05	n.w.
Chatham, N. B.	29.97	29.99	+ .07	32.4	— 1.1	3.12	+ 0.02	w.
Father Point, Que.	29.97	30.00	+ .09	30.8	— 1.7	2.65	+ 0.94	w.
Quebec, Que.	29.68	30.02	— .07	31.7	— 2.8	1.88	— 0.51	w.
Montreal, Que.	29.82	30.03	— .07	35.0	— 2.5	2.18	— 0.25	s.w.
Rockliffe, Ont.	29.45	29.99	+ .01	32.3	— 1.7	2.51	+ 1.27	se.
Kingston, Ont.	29.68	30.00	+ .03	37.4	— 1.1	3.05	+ 1.10	s.w.
Toronto, Ont.	29.62	30.01	— .01	38.6	— 1.4	4.78	+ 2.90	w.
White River, Ont.	28.63	30.03	.....	25.4	.....	0.52	.....	n.
Port Stanley, Ont.	29.33	29.98	.....	39.4	.....	4.32	+ 2.19	e.
Saugeen, Ont.	29.24	29.97	— .03	37.2	+ 0.2	3.16	+ 1.33	se.
Parry Sound, Ont.	29.27	29.99	+ .01	34.8	+ 0.3	4.00	+ 2.28	se.
Port Arthur, Ont.	29.22	29.94	— .08	28.6	— 3.9	3.09	+ 1.72	n.w.
Winnipeg, Man.	29.12	29.99	— .04	27.3	— 6.2	2.30	+ 0.95	ne.
Minnedosa, Man.	28.10	29.97	— .01	26.8	— 6.7	0.48	— 0.64	e.
Qu'Appelle, Assinibola. .	27.66	30.00	+ .04	26.7	— 8.8	1.07	+ 0.01	n.w.
Medicine Hat, Assinibola.	27.57	29.92	.00	36.5	— 7.5	0.77	— 0.26	s.w.
Swift Current, Assinibola	27.34	30.00	.00	30.8	— 7.7	0.24	— 0.94	ne.
Calgary	26.31	29.93	+ .01	32.7	— 5.3	0.47	— 0.15	e.
Prince Albert	28.44	30.02	.....	22.8	.....	0.03	.....	n.
Spences Bridge, B. C.	29.04	29.87	.....	46.3	.....	0.60	.....	w.
Edmonton, Alberta	27.54	29.94	+ .03	32.1	— 8.1	0.61	+ 0.04	se.
Battleford, Saskatchewan	28.20	30.00	.....	23.0	.....	0.13	.....	se.
Grindstone	29.88	29.91	.....	29.1	.....	3.73	.....	n.
Sandy Point	29.87	29.89	.....	31.2	.....	0.94	.....	se.
<i>March, 1893.</i>								
Prince Albert, Sas.	28.45	30.09	.....	5.0	.....	0.22	.....	w.
Grindstone	29.86	29.90	.....	21.4	.....	5.01	.....	n.w.

Table of miscellaneous meteorological data for April, 1893—Weather Bureau observations.

Table with columns: Districts and stations, Elevation above sea-level, Length of record, Pressure, Temperature of the air, Humidity and precipitation, Wind, Mean temperature data since opening of station. Rows include New England, Mid. Atlantic States, S. Atlantic States, Florida Peninsula, Eastern Gulf States, Western Gulf States, Ohio Val. & Tenn., Lower Lake Region, Upper Lake Region, and Extremes Northwest.

Table of miscellaneous meteorological data for April, 1893—Weather Bureau observations—Continued.

Table with columns: Districts and stations, Elevation above sea-level, Length of record, Pressure, Temperature of the air, Humidity and precipitation, Wind, and Mean temperature data. Rows include stations like Fort Buford, Upper Miss. Valley, Minneapolis, etc.

NOTE.—The data at stations having no departures are not used in computing the district averages. Letters of the alphabet denote number of days missing from the record. * Two or more directions, dates, or years. † Received too late to be considered in departures, etc. ‡ All barometer, temperature, and precipitation normals, and extremes of temperature are obtained from Fort Assinaboine records.